

REMARKS/ARGUMENTS

Claims 1, 2, 4, 5, 9, 10, 19, and 20 were previously pending in the application. Claims 1 and 9 are amended for clarity, and new claims 30-39 are added herein. Assuming the entry of this amendment, claims 1, 2, 4, 5, 9, 10, 19, 20, and 30-39 are now pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Rejections Under 35 U.S.C. 103

In paragraph 3, the Examiner rejected claims 1, 2, 4, and 5 under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Borland et al. ("Borland") and further in view of Young, III ("Young").

In paragraph 4, the Examiner rejected claim 9, 10, 19, and 20 under 35 U.S.C. 103(a) as being unpatentable over Sato in view of Borland and further in view of Young and Tuoriniemi et al. ("Tuoriniemi").

Incorporation by Reference of Arguments in Reply Filed July 14, 2008

The Office Action dated August 4, 2008 is substantially the same as the Office Action dated April 21, 2008, with the exception of the Response to Arguments found on page 6-8 of the October 31, 2008 Office Action. In the Amendment filed July 14, 2008, the Applicants made a complete and compelling response to the arguments presented in the April 21, 2008 Office Action. Accordingly, the Applicants hereby incorporate those arguments in their entirety by reference in this reply.

The remarks provide additional reasons in support of Applicants' assertion that the pending claims are allowable over the cited art and respond to the Examiner's "Response to Arguments" section found in paragraph 5 on pages 6-8 of the October 31, 2008 Office Action.

Claim 1:

For the following reasons, the Applicant submits that claim 1 is allowable over Sato in view of Borland and further in view of Young.

Claim 1, as amended, recites, "[a] A cordless telephone, comprising: a remote handset; a base unit matched to said remote handset; an MPEG audio player integrated within at least one of said remote handset and said base unit; and a summer to digitally sum a digitally synthesized ring tone with an MPEG audio bit stream to allow a user of said cordless telephone to hear said cordless telephone ringing along with music."

In the October 31, 2008 Office Action, the Examiner acknowledged that Sato fails to "disclose an MPEG audio player integrated within at least one of the remote handset and the base unit." (See Office Action, page 3.) The Examiner asserted, however, that Borland teaches an MPEG audio player integrated within at least one of the remote handset and the base unit, and that one of ordinary skill in the art at the time the invention was made would be motivated to combine the teaching of Borland into the system of Sato in order to provide a high-quality audio signal. (Id.)

The Applicants respectfully disagree, because the Examiner's proposed motivation to combine Sato and Borland lacks merit. Sato fails to disclose, and the Examiner has failed to identify, any actual problems with the "quality" of audio produced by the handset of Sato that would support the Examiner's proposed modification. Rather, Sato discloses the use of digital audio that is transmitted to a handset and

then converted to an analog signal for output to a speaker. (See Sato, paragraph 0020.) Borland teaches the use of MPEG audio compression to overcome a bandwidth bottleneck created by the public switched telephone network (PSTN). Because MPEG compression is a lossy compression algorithm, however, it reduces audio quality, rather than improving it. Thus, one of ordinary skill in the art at the time the invention was made would not have been motivated to combine the teaching of Borland into the system of Sato.

The Examiner further acknowledged that the combination of Sato and Borland fails to disclose the limitation of "digitally summing a digitally synthesized ring tone with an audio bit stream to allow a user of said cordless telephone to hear said cordless telephone ringing along with music." (Office Action, page 5.) The Examiner alleged, however, that Young teaches this limitation. (Id.) The Applicants again disagree.

The Applicants addressed this assertion in the remarks in the July 14, 2008 Amendment. The Applicants explained that Young discloses an analog mixer that inputs an analog ring tone, not a digital synthesized ring tone, as recited by claim 1. The analog mixer receives its inputs from (i) a music source that produces an analog music signal, (ii) a microphone detecting ambient noise, and (iii) a ring signal from the phone line. (See Figs. 1 and 2 and column 4, lines 7-10, stating "A ring signal on the public switched telephone network directed to Phone 10 is detected by Control Box 20, passed through attenuator 24 to provide a Ring Volume, and input to mixer 22.") None of the three inputs are digital signals. As such, the Applicants argued that Young fails to teach or even suggest the use of digital summation, much less digitally summing a digital synthesized ring tone.

In the October 31, 2008 Office Action, the Examiner responded as follows:

Young does indeed teach summing a digital synthesized ring tone with an MP3 audio bit stream to allow a user of a cordless telephone to hear the cordless telephone ringing along with music (see column 3, lines 18-21, column 4, lines 27-34, see "the present invention would operate identically with digital or other type telephones," also see Abstract and column 2, lines 9-24, see "a user headset is connected to a mixer with audio input from a Music Source, a mic detecting ambient noise, and a ring tone from the phone"), and the combination of Sato, Borland, and Young does indeed teach applicant's claimed limitations as recited in claims 1, 2, 4, and 5.

(Office Action, page 7.)

The Applicants respectfully submit that the Examiner goes well beyond the teaching of Young, in asserting that Young teaches digitally summing a digital synthesized ring tone with an MP3 audio bit stream. The portions of Young cited by the Examiner simply do not support Examiner's assertion. Young, column 3, lines 18-21, states that "[p]hone 10 is a standard analog or digital telephone used access the public switch telephone network. A preferred phone would be headphone-compatible having your phone and microphone level adjustments and electrical compatibilities." Similarly, Young, column 5, lines 30-32, states that "as will be appreciated, the preferred embodiment utilizes an analog phone, but the present invention would operate identically with digital or other type telephones"

The Applicants do not dispute that the apparatus described in Young may operate with a digital-type telephone. The system of Young comprises a telephone 10, a control box 20, a music source 30, and a headset 40. (See Young, column 2, lines 42-49, and Figure 1.) Music source 30 and headset 40 are connected directly to control box 20. Only the control box 20 interfaces with telephone 10, through (i) the phone line 27, (ii) the handset lines 15 and 17, and (iii) a lifter signal line 19 that indicates to the control box 20 whether the handset is on-hook or off-hook, based on the operation of a mechanical microswitch for detecting the position of a manually operated handset lifter that is affixed to phone 10. (See id., column 3, lines 31-33, and Figure 1.) As such, the system of Young may operate equally well

(indeed, identically) with either an analog telephone or a digital telephone, because the manually operated handset lifter may be affixed as easily to an analog telephone as to a digital telephone, and because both analog and digital telephones have a phone line port and handset ports that may be connected to the control box.

The Applicants disagree, however, that these cited portions of Young teach digitally summing a digital synthesized ring tone with an MP3 audio bit stream. The signals that are input into mixer 22 in Young are analog signals. Young provides no teaching or suggestion whatsoever that the signals input to mixer 22 may be digital signals, or that mixer 22 may be a digital mixer. As such, Young does not teach digital summing. Moreover, Young provides no teaching or suggestion whatsoever regarding a digital synthesized ring tone. Finally, Young provides no teaching or suggestion whatsoever regarding an MPEG audio bit stream. As such, it cannot be said that Young teaches or even suggests "a summer to digitally sum a digitally synthesized ring tone with an MPEG audio bit stream," as recited by claim 1.

The Examiner also cited Tuoriniemi, column 6, lines 39-54, which states that "[t]his combined system of digital cellular telephone and audio device gives a user a hands-free option and virtually ultimate mobility to listen to an audio program while being able to hear telephone audio ring signals and initiate telephone calls through a common headset." In Tuoriniemi, however, this feature is implemented by connecting both (i) the analog output from an audio device 68 and (ii) the analog output from a microcontroller 49 within a housing 22 of a combined personal communication and audio set to a controllable switch 38. The controllable switch then routes one of the signals to a speaker. (See Tuoriniemi, column 5, lines 47-59 and Figure 3.) As such, controllable switch 38 is not a digital summer, nor are the analog outputs from device 68 or microcontroller 49 digital signals. Thus, Tuoriniemi similarly does not teach or even suggest "a summer to digitally sum a digitally synthesized ring tone with an MPEG audio bit stream," as recited by claim 1.

For all these reasons, the Applicants submit that claim 1 is allowable over Sato, Borland, and Young, taken together or in combination with Tuoriniemi. For similar reasons, the Applicants submit that claims 9 and 19 are also allowable over the cited references.

Since claims 2, 4, 5, 10, and 20 depend directly or indirectly from claim 1, 9 or 19, it is further submitted that those claims are also allowable over Sato, Borland, Young, and Tuoriniemi.

The Applicants therefore respectfully submit that the rejections of claims 1, 2, 4, 5, 9, 10, 19, and 20 under Section 103 have been overcome.

New Claims 30-39

New claims 30-39 have been added. These new claims are amply supported by the specification. The Applicants respectfully submit that new claims 30-39 recite limitations that are neither taught nor even suggested by the cited prior art.

In particular, new claim 30 recites the limitations that the base unit is adapted (i) to receive a telephone audio signal from a telephone line and (ii) to transmit the telephone audio signal to the remote handset; and the summer is further adapted to digitally sum the telephone audio signal with the MPEG audio bit stream. Similarly, claim 35 recites the steps of: (i) the base unit receiving a telephone audio signal from the PSTN; (ii) the base unit transmitting the telephone audio signal to the remote handset; and (iii) the remote handset digitally summing the telephone audio signal with the MPEG audio bit stream.

New claim 31 recites the limitations that (i) the telephone audio signal is monaural; (ii) the MPEG audio bit stream has a plurality of stereo channels; and (iii) the summer is adapted to digitally sum the monaural telephone audio signal into each of the plurality of stereo channels of the MPEG audio bit

stream, such that a sense of balance in the user is improved. Similarly, claim 36 recites that (i) the telephone audio signal is monaural; (ii) the MPEG audio bit stream has a plurality of stereo channels; and (iii) the step of digitally summing the telephone audio signal with the MPEG audio bit stream comprises digitally summing the monaural telephone audio signal into each of the plurality of stereo channels of the MPEG audio bit stream, such that a sense of balance in the user is improved.

New claim 32 recites the limitation that both the MPEG audio player and the summer are jointly implemented as a single digital signal processor adapted to digitally sum the digitally synthesized ring tone with the MPEG audio bit stream. Similarly, new claim 37 recites the steps of (i) playing pre-loaded MP3 music from the remote handset of the cordless telephone and (ii) digitally summing the telephone audio signal with the MPEG audio bit stream are performed by a single digital signal processor.

New claim 33 recites the limitation that the digital signal processor is adapted to digitally sum the digitally synthesized ring tone with the MPEG audio bit stream by: (i) decoding the MPEG audio bit stream to produce a digital reconstructed audio signal, and (ii) digitally summing the digital reconstructed audio signal with the digitally synthesized ring tone to produce a digital summed audio signal. Similarly, new claim 38 recites that the step of digitally summing the digitally synthesized ring tone with the MPEG audio bit stream comprises: (i) decoding the MPEG audio bit stream to produce a digital reconstructed audio signal, and (ii) digitally summing the digital reconstructed audio signal with the digitally synthesized ring tone to produce a digital summed audio signal.

Finally, new claim 34 recites the limitation that the cordless telephone further comprises a digital-to-analog converter connected to the digital signal processor to receive the digital summed audio signal and to produce an analog audio signal suitable for outputting to the user. Similarly, new claim 39 recites the step of digital-to-analog converting the digital summed audio signal to produce an analog audio signal suitable for outputting to the user.

The Applicants respectfully submit that new claims 30-39 recite limitations that are neither taught nor even suggested by the cited prior art. New claims 30-39 are thus allowable.

Conclusion

For the reasons set forth above, the Applicants respectfully submit that (i) the rejections of claims 1, 2, 4, 5, 9, 10, 19, and 20 have been overcome and (ii) new claims 30-39 patentably define over the cited prior art.

In view of the above amendments and remarks, the Applicants believe that the now-pending claims are in condition for allowance. Therefore, the Applicants believe that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Fees

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17 or credit any overpayment to Mendelsohn & Associates, P.C. Deposit Account No. 50-0782.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Respectfully submitted,

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Customer No. 46900
Mendelsohn & Associates, P.C.
1500 John F. Kennedy Blvd., Suite 405
Philadelphia, Pennsylvania 19102

/David Cargille/
David Cargille
Registration No. 46,600
Attorney for Applicant
(215) 599-0984 (phone)
(215) 557-8477 (fax)